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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,596	07/16/2003	Christophe Maleville	4717-5700	7460
28765	7590	08/24/2006	EXAMINER	
WINSTON & STRAWN LLP 1700 K STREET, N.W. WASHINGTON, DC 20006			CHEN, JACK S J	
			ART UNIT	PAPER NUMBER
			2813	

DATE MAILED: 08/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/619,596

Applicant(s)

MALEVILLE, CHRISTOPHE

Examiner

Jack Chen

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 12, 29 and 30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/14/03, 11/6/03, 4/9/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on July 6, 2005 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Patent NO. 7,048,867 B2 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Objections

2. Claims 1 and 22 are objected to because of the following informalities:

Re claim 1, line 4, the phrase “the first and second faces” should change to –the first and second front faces—for consistency.

Re claim 22, line 4, the phrase “the first and second faces” should change to –the first and second round front faces—for consistency.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3-4, 6-9 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 3, line 2, the phrase “the front outline” lacks antecedent basis.

Re claim 3, lines 1-4, the phrase “at least a portion of the front outline ... in which peripheral region the bonding between the faces is weak or absent” is unclear (since there is no front outline recited in the independent claim).

Re claim 4, the phrase “the peripheral region” lacks antecedent basis.

Re claim 6, the phrase “the bonded face” lacks antecedent basis.

Re claim 27, the phrase “the region of weakness” lacks antecedent basis.

The remaining claims 7-9 are rejected for depending from the above rejected claim.

For the purpose of patentability, these claims will be interpreted as best understood.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

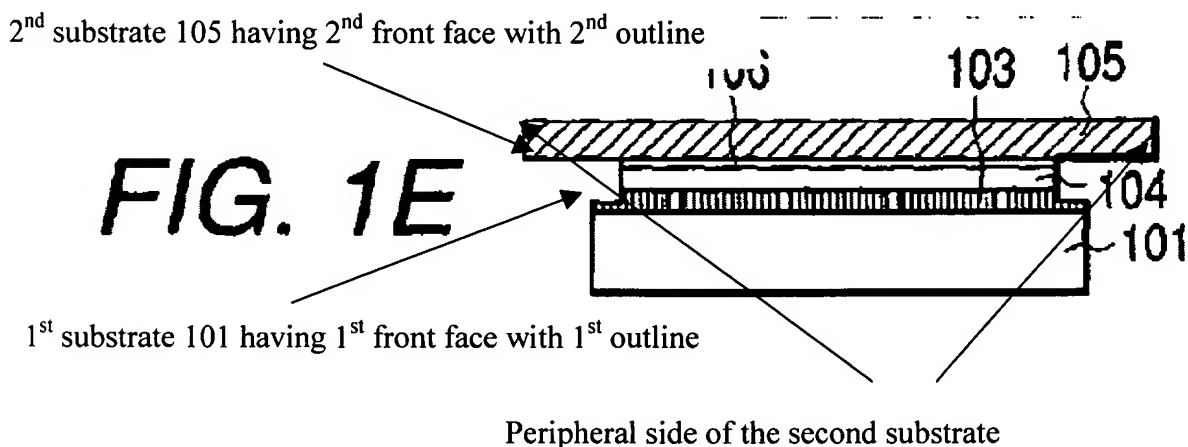
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 5-11, 13-17, 19-23 and 25-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishida et al., US Pub. No. 2001/0055854 A1.

Re claims 1, 22 and 25, Nishida et al. disclose a method for transferring a first substrate 101 to a second substrate 105 (figs. 1A-1E, wafer is having round shape), which comprises: molecularly bonding to each other first and second front faces of first 101 and second 105 substrates (see figure below for more details), respectively, to provide a composite structure (fig. 1E), the first and second faces being substantially parallel and corresponding in surface shape (fig. 1E), the first front face having a first outline (fig. 1D), the second front face having a second

outline (fig. 1E), and a peripheral side of the second substrate substantially bordering the second front face and being oriented generally perpendicularly with respect thereto (fig. 1E), wherein the second outline has dimensions larger than the first outline (fig. 1E), such that during bonding at least a portion of the first outline is disposed within the second outline (fig. 1E) and inherently shows improving bonding in a region at the periphery of the first front face; and implanting atomic species (fig. 1A, paragraph 34) in a donor substrate that comprises the first or second substrate to provide a region 103/103' of weakness for facilitating splitting through the donor substrate, see figs. 1A-13G and page 1-11 for more details..



Re claims 2 and 23, wherein the peripheral side is oriented perpendicularly or quasi-perpendicularly with respect to the second front face (fig. 1E).

Re claim 3, wherein the at least a portion of the first outline (fig. 1E) is disposed within the second outline (fig. 1E) during bonding for minimizing the size of a peripheral region about the first front face within an overlapping area at which the front faces overlap, in which peripheral region the bonding between the faces is weak or absent.

Re claim 5, wherein the first and second substrates comprise a semiconductor material 102 or 106 at least at one of the front faces.

Re claim 6, further comprising providing a useful layer 104 from the donor substrate, the useful layer being of a semiconductor material and comprising one of the first or second substrate adjacent the bonded face thereof (fig. 1E).

Re claim 7, wherein the useful layer is useful for producing an electronic, optic, or optoelectronic component or substrate (fig. 1E).

Re claim 8, further comprising detaching the useful layer from a donor portion of the donor substrate of the composite structure (fig. 1F).

Re claim 9, wherein the useful layer is detached by applying electrical or mechanical stress to, supplying thermal energy to, or chemically etching the composite structure, or by combinations thereof (fig. 1F, paragraph 46-47).

Re claim 10, further comprising splitting the donor substrate at the region of weakness 103/103' (fig. 1F).

Re claim 11, wherein the first outline is substantially completely disposed within the second

outline (fig. 1E) during the bonding.

Re claim 13, wherein the donor substrate comprises the second substrate 101 (figs. 1A and see figs. 11A-13G, in this case, this particular claim is rejected under figs. 11A-11H or 13A-13G).

Re claim 14, wherein the first substrate 101 comprises a first primary chamfer (fig. 8, i.e., the edge portion) extending around the first front face and having a primary chamfer outline that is at least partially disposed within the second outline during bonding (fig. 1E).

Re claim 15, wherein the primary chamfer (fig. 8, i.e., the edge portion) outline is disposed substantially entirely within the second outline during bonding (fig. 1E).

Re claim 16, wherein the front faces are substantially flat (fig. 1E).

Re claim 17, wherein at least one of the front faces comprises an insulator 106 (paragraph 32, i.e., epoxy-type adhesive).

Re claim 19, wherein at least one of the substrates 105 is of bulk material (paragraph 31, i.e., silicon wafer).

Re claim 20, wherein the second substrate 105 is substantially free of a primary chamfer between the peripheral side and the second front face thereof (fig. 1E).

Re claim 21, wherein the second substrate is substantially free of any chamfer between the peripheral side and the second front face thereof (fig. 1E).

Re claim 26, creating a region of weakness 103/103' (fig. 1B) in a donor substrate that comprises the first or second substrate for facilitating splitting; and splitting the donor substrate after the bonding at the region of weakness (fig. 1F).

Re claim 27, wherein the region of weakness is formed by implantation of atomic species (fig. 1A and paragraph 34).

Re claim 28, wherein the region of weakness is formed by a porous layer 103 (fig. 1B).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4, 18 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishida et al., US Pub. No. 2001/0055854 A1.

Nishida et al. taught in above; however, Nishida is silent to the size/diameter of the peripheral region, first substrate/front face and second substrate/front face.

The claimed ranges of the peripheral region, first substrate/front face and second substrate/front face of claims 4, 18 and 24 are considered to involve routine optimization while has been held to be within the level of ordinary skill in the art. As noted in *In re Aller*, the selection of reaction parameters such as width, thickness, temperature and concentration, etc. would have been obvious:

“Normally, it is to be expected that a change in temperature, or in concentration, or in both, would be an unpatentable modification. Under some circumstances, however, changes such as these may impart patentability to a process if the particular ranges claimed produce a new and unexpected result which is different in kind and not merely degree from the results of the prior art...such ranges are termed Acritical ranges and the applicant has the burden of proving such criticality.... More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.”

In re Aller 105 USPQ233, 255 (CCPA 1955). See also *In re Waite* 77 USPQ 586 (CCPA 1948); *In re Scherl* 70 USPQ 204 (CCPA 1946); *In re Irmischer* 66 USPQ 314 (CCPA 1945); *In re Norman* 66 USPQ 308 (CCPA 1945); *In re Swenson* 56 USPQ 372 (CCPA 1942); *In re Sola* 25 USPQ 433 (CCPA 1935); *In re Dreyfus* 24 USPQ 52 (CCPA 1934).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Nishida et al. by selecting the suitable size/diameter for the peripheral region, first substrate/front face and second substrate/front face,


since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Chen whose telephone number is (571)272-1689. The examiner can normally be reached on Monday-Friday (9:00am-6:30pm) alternate Monday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W. Whitehead can be reached on (571)272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Jack Chen
Primary Examiner
Art Unit 2813

August 18, 2006